



UNITED STATES PATENT AND TRADEMARK OFFICE

H.D

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,723	01/17/2006	Heinz Geier	10191/3927	9885
26646	7590	11/06/2006	EXAMINER	
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			CYGAN, MICHAEL T	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/516,723	Applicant(s) GEIER ET AL.	
	Examiner Michael Cygan	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-38 is/are pending in the application.
- 4a) Of the above claim(s) 36-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-32, 34 and 35 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/02/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 18-35, drawn to a gas sensor, classified in class 73, subclass 23.31.
- II. Claims 36-38, drawn to method for forming a gas sensor, classified in class 73, subclass 23.2.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the method can be used to make a non-centered sensor element gas sensor.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Aaron Deditch on 27 October 2006 a provisional election was made with traverse to prosecute the invention of I, claims 18-35. Affirmation of this election must be made by applicant in replying to this Office

Art Unit: 2855

action. Claims 36-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Election/Restrictions

2. Applicant's election with traverse of invention I is acknowledged. The traversal was based upon no specific grounds. The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claims 18-35 are objected to because of the following informalities: the phrase "a half of the sensor element facing the measuring gas" in claim 18 is unclear. The claim is rejected under the other alternative limitation (centered along a longitudinal extension). Appropriate correction is required.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 18-22 and 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Gutierrez (US 6,453,726 B1). Gutierrez discloses the claimed invention, a gas sensor comprising a sensor element [82] for measuring oxygen and temperature, a metal housing [50], a sealing element [90] separating the exhaust-sensing element [82] from the reference sensing element [84], a metal receptacle [40] that may be integrally welded to housing and a sleeve [20], where the sealing element is centered along the sensor element, the metal receptacle [40] adjoins a measuring gas chamber ([31] and lower part of [50]), the sealing element [90] is friction joined to the sensor element [82] and receptacle [40], where the shields [40,20] and shell [20] may be commonly adjoined by welding (column 3 lines 4-18), where the receptacle [40] has a (upside-down) cup-shape (Figure 1) and the bottom of the receptacle includes a recess for the sensor

element [80], where the distance between receptacle and element is less than twice the height of the sensor element (Figure 1). See entire document.

5. Claims 18-23, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (US 5,031,445). Kato discloses the claimed invention, a gas sensor comprising a sensor element [22] for measuring oxygen and temperature, a metal housing [24], a sealing element [28,30] separating the exhaust-sensing element [22] from the reference sensing element [22 inside electrode], a metal receptacle [26] that may be integrally welded to housing and a sleeve [42], where the sealing element is centered along the sensor element, the metal receptacle [26] adjoins a measuring gas chamber ([20] and lower part of [24]), the sealing element [28,30] is friction joined to the sensor element [22] and receptacle [26], where the receptacle [40] has a cup-shape (Figure 1) and the bottom of the receptacle includes a recess for the sensor element [22], where the distance between receptacle and element is less than twice the height of the sensor element (Figure 5a), and where the seal may comprise glass (column 7 lines 43-45). See entire document.

6. Claims 18-23, 29-32, and 34 are rejected under 35 U.S.C. 102(a) as being anticipated by Geier (US 6,347,543 B1). Geier discloses the claimed invention, a gas sensor comprising a sensor element [6] for measuring oxygen and temperature, a metal housing [7], a sealing element [1,2,3], a metal receptacle

[18] that may be integrally welded to a sleeve [14], where the sealing element is centered along the sensor element (Figure 1), the metal receptacle [18] includes an outward-facing perpendicular section (Figure 5) and adjoins a measuring gas chamber (Figure 1), the sealing element [28,30] is friction joined to the sensor element [22] and receptacle [26], where the receptacle [18] has a cup-shape (Figure 1) and the bottom of the receptacle includes a recess for the sensor element [6], where the distance between receptacle and element is less than twice the height of the sensor element (Figure 1). The seal may be a high-melting glass near the exhaust side [1] and a low-melting glass near the rear [2]; column 2 lines 32-48. The seal may alternatively be composed of a ceramic [1] and a glass [2]; column 2 lines 32-48. See entire document.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geier (US 6,347,543 B1) in view of Shirai (US 6,673,224 B2). Geier teaches the claimed invention except for the use of a glass member having a coefficient of thermal expansion that differs from the coefficient of thermal expansion of the sensor member by 10 percent or less. Shirai teaches a seal for a gas sensor

having a difference of thermal expansion coefficient with a sensor member of less than 10 percent (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a seal for a gas sensor having a difference of thermal expansion coefficient with a sensor member of less than 10 percent as taught by Shirai in an invention as taught by Geier to form the sealing glass, since Shirai teaches that such matching of coefficients reduces sensor fault and breakage (column 1).

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 5,031,445) in view of Shirai (US 6,673,224 B2). Kato teaches the claimed invention except for the use of a glass member having a coefficient of thermal expansion that differs from the coefficient of thermal expansion of the sensor member by 10 percent or less. Shirai teaches a seal for a gas sensor having a difference of thermal expansion coefficient with a sensor member of less than 10 percent (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a seal for a gas sensor having a difference of thermal expansion coefficient with a sensor member of less than 10 percent as taught by Shirai in an invention as taught by Kato to form the sealing glass, since Shirai teaches that such matching of coefficients reduces sensor fault and breakage (column 1).

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gutierrez (US 6,453,726 B1) in view of Shirai (US 6,673,224 B2). Gutierrez teaches the claimed invention except for the use of a glass member having a coefficient of thermal expansion that differs from the coefficient of thermal expansion of the sensor member by 10 percent or less. Shirai teaches a seal for a gas sensor having a difference of thermal expansion coefficient with a sensor member of less than 10 percent (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a seal for a gas sensor having a difference of thermal expansion coefficient with a sensor member of less than 10 percent as taught by Shirai in an invention as taught by Gutierrez to form the sealing glass, since Shirai teaches that such matching of coefficients reduces sensor fault and breakage (column 1).
10. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geier (US 6,347,543 B1) in view of Weyl (US 6,474,655 B1). Geyer teaches the claimed invention except for the use of a pressed ceramic powder arranged between a first ceramic and second (glass or glass ceramic) sealing elements. Weyl teaches a seal formed from a pressed ceramic powder [37] between ceramic [21] and glass ceramic [36] sealing elements (figure 2 and column 3) in a gas sensor having a cup-shaped receptacle and sensor element. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pressed ceramic powder arranged between a first ceramic and

Art Unit: 2855

second (glass or glass ceramic) sealing elements as taught by Weyl in the invention of Geier, since Weyl teaches that such a composition substantially reduces the permeability to gaseous and liquid hydrocarbons (column 3 lines 5-22).

Allowable Subject Matter

11. Claims 32 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the claim objection to the language of claim 18 is overcome. The prior art neither discloses nor fairly teaches the third sealing element being a viscous glass element rearward of two glass elements having melting points as set forth in claim 18, in a structure having the limitations positively recited in claim 18.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

Art Unit: 2855

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER